

Vaginismus as a Cause of Unconsummated Marriage: An Egyptian Case Series

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ABSTRACT

Background: Vaginismus, a prevalent genito-pelvic pain/penetration disorder in the Middle East, often leads to unconsummated marriages, with a significant impact on marital and social well-being. Traditional treatments have shown limited success in refractory cases.

Objective: To evaluate the effectiveness of an integrated treatment program, including Botulinum Toxin A (BTXA) injections, gradual vaginal introitus dilation, and psychological support, in treating refractory vaginismus in Egyptian women.

Patients and Methods: This retrospective case series analyzed 1,400 women with refractory vaginismus, treated between January 2013 and 2023. The program comprised BTXA injections in the perineal muscles, followed by guided physiotherapy for muscle dilation and psychological counseling. Success was defined as painless vaginal penetration.

Results: Of the initial 1,512 cases, 1,400 completed the program. The average age of participants was 28 years. Most patients (93%) had tried conventional treatments without success. Post-treatment, 92.6% (1,288/1,400) achieved painless penetration. The majority required 3 to 5 dilatation treatment sessions for success. Mild adverse effects were reported in 28% of cases.

Conclusion: The integrated treatment program, combining BTXA injections, gradual dilation, and psychological support, is highly effective in managing refractory vaginismus in Egyptian women, with a success rate of over 90%. This approach offers a promising solution for couples facing unconsummated marriages due to vaginismus.

Keywords: Vaginismus, unconsummated, marriage, Clostridium, Botulinum, Neurotoxin, Perineal, Muscles.

INTRODUCTION

Vaginismus belongs to a group of conditions known as genito-pelvic pain/penetration disorders (GPPPD). It typically manifests as difficulty or pain with any form of vaginal penetration, including during digital examination, tampon insertion, the use of vaginal dilators, or when undergoing gynaecological examinations with a speculum [1].

These individuals are unable to relax in response to verbal cues. According to Masters and Johnson, any form of vaginal penetration—whether actual, imagined, or anticipated—triggers a strong, involuntary spasm of the pelvic and perineal muscles. In severe cases, other muscle groups such as the thigh abductors, abdominal muscles, and gluteal muscles may also be involved [2]. As a result, sexual intercourse is frequently painful or entirely unattainable [3]. Diagnosis of this condition relies mainly on a thorough medical history and physical examination.

Vaginismus affects 14% to 34% of women under 30 years of age, and 6.5% to 45% of older women [4].

Early references to vaginismus can be traced back to the works of Hugier and Dr. Marion Sims in 1861. In clinical settings, the reported prevalence of vaginismus ranges from 5% to 17% [5]. However, in the Middle East region, some publications suggest a higher incidence, estimating it to be between 8% and 13% [6]. This disparity may be attributed to the lack of sexual education in homes and schools, where discussing such matters is considered taboo. Additionally, mothers often rely on anecdotal information, contributing to a general lack of sexual knowledge. These factors, influenced by cultural and societal norms, are believed to contribute

to the higher prevalence of vaginismus in the Middle East [7]. Furthermore, both spouses typically lack sexual experience due to religious and traditional restrictions on premarital sex. As a result, husbands are often also sexually inexperienced, contributing to a cycle of ignorance regarding sexual matters.

In general, vaginismus is thought to be both frequently belittled, under diagnosed, and sometimes inappropriately treated with surgical interventions [8]. **Primary** vaginismus (so called life-long vaginismus) is usually idiopathic. It refers to the experience of vaginismus with 'first-time' intercourse attempts [9]. Typically, primary vaginismus will be discovered, in our region, when a woman attempts to have sex for the very first time on her wedding night. **Secondary** vaginismus due to vaginitis or painful scars in the perineum or the vagina following childbirth or surgery may be reported as well in some cases [9].

Medications such as lubricants, anesthetic creams, or alprazolam (used to reduce anxiety), have been effective. However, approximately 10% of patients do not respond [10].

Classification of the Degrees of Vaginismus (Lamont) [9]

Degree Description

- First Perineal and levator spasm, relieved with reassurance.
- Second Perineal spasm, maintained throughout pelvis.
- Third Levator spasm and elevation of buttocks.
- Fourth Levator and perineal spasm, elevation of the pelvis; adduction of the thighs and retreat away

off the edge of the table. Spasm of the abdominal and gluteal muscles may occur.

- Fifth Panic, dyspnea, loss of consciousness (Pacik) [11].

Pacik has recently introduced a new classification, grade 5 vaginismus, which is characterised by visceral symptoms in response to routine gynaecological examinations, inability to engage in intercourse, and spasm of the bulbocavernosus muscle [12].

Botulinum A toxin (BTXA) is a glycoprotein and one of seven neurotoxins produced by *Clostridium botulinum*. It is administered locally into affected muscles, where it works by blocking the release of acetylcholine at the neuromuscular junction, thereby weakening the muscle [13]. BTXA is commonly used to reduce facial wrinkles, and it has also been employed in other medical areas such as treating jaw-closing mandibular joint dystonia, neck torticollis, dysphonia, and excessive axillary sweating. In pelvic muscle conditions, BTXA has been utilised to manage anal fissures [14]. **Shafik and Sebai** conducted a placebo-controlled study involving 13 patients, which showed complete healing of fissures following BTXA treatment [15].

When administering botulinum toxin, it is crucial to consider factors like the number of injection sites, the concentration of BTXA, and the total dose per session. Adverse effects can occur due to toxin spread, leading to weakness in nearby muscles and local autonomic dysfunction [14]. To minimise the risk of developing antibodies, the total dose and frequency of BTXA injections should be kept low, although the incidence of antibody development is typically low (4%) [16].

The aim of our work is to test the patient compliance and effectiveness of local injection of Botulinum Toxin A in the perineal muscles as a part on an integrated program including handled gradual vaginal introitus dilatation in addition to psychological support sessions on the treatment of refractory cases of vaginismus.

SUBJECT AND METHODS

Our initial study, which involved treating 75 cases of refractory vaginismus with injections of "Botulinum toxin A," was registered on www.Clinicaltrials.gov under the identifier NCT01859507.

Both husband and wife sat with the treating doctor (AR) to explain the steps of the program and addressing the inquiries set by the couple, and in some cases the accompanying family member. Following this step, the couple signed a witnessed written, informed consent in Arabic, to be enrolled in the treatment program, including BTXA injection in the perineal muscles, with all its limitations and side effects, as well as the possible hymenal disruption in the later stages

with the use of silicone dilators, of gradually increasing girth.

In this study we studied 1,400 cases with vaginismus over a period of 10-years, from January 2013–2023, is considered the largest in the literature to date. Our primary objective is to intention to treat cases with refractory vaginismus not responding to conventional methods of treatment. We started with 1,512 cases, of which 112 patients dropped off from follow up due to failure of contact or not willing to participate further in the study in spite of their initial informed consent signage due to personal or family (mostly husband) reasons. So, we ended up with 1,400 cases.

During the initial session, thorough history-taking involves understanding the challenges the individuals are experiencing and the approaches, whether medical or traditional, they have tried to address them. Proper counselling of the couple is essential to explain the treatment approach, which includes BTXA injections and subsequent dilation sessions.

We included in our study patients suffering from unconsummated marriage due to vaginismus that led to *apareunia* or *dyspareunia*. The patients were between ages of 17 to 42 years of age. Our patients were categorised as "refractory"; meaning that, in spite of pursuing conventionally treatment methods (mentioned earlier) , they remain fearful of any approach to the intimate area between the thighs, or have tried vaginal manipulation to overcome the so called "brick wall" that the husband encounters as he tries to penetrate the vaginal introitus.

We usually ask our patient to schedule their injection post-menstrual. This avoids injecting BTXA in the presence of incidental pregnancies. We request basic blood tests including the complete blood count, fasting blood glucose and coagulation profile. We exclude patients with psychiatric disorders or judged by the treating team seem to be unreliable, irresponsible and of the negligent type as regards following instructions. We are specifically perceptive of wives who have been abused whether verbally or physically by the husband and passively does not wish to continue in the marriage, but afraid to declare her wishes for fear of social stigma, family obligations, oppression or poverty.

All assessments were conducted by a single examiner (AmR) to minimize observer bias. Patients were positioned comfortably on the examination table in the lithotomy position. The examination began with a gentle and informative approach to the genital area to establish trust with the patient. This was followed by digital palpation of the perineal area and examination of the vaginal introitus to assess the degree of spasm and identify the affected muscle(s). We recorded the muscle spasm severity and the patient's psychological profile. The same examiner assigned a code indicating the severity of the condition (V1-severe to V5), as well as

the level of fear or phobia reported by the patient valuated as (0-100).

The result of the examination is discussed with the couple. They are re-counselled about the treatment plan designed according to their condition, as well as scheduled for the treatment sessions.

The BTXA injection procedure was conducted in a day case unit. For mild to moderate cases of vaginismus (V1 - V3 patients), patients underwent the procedure in an office setting, with local anaesthesia administered before the BTXA injection. Patients were advised to fast overnight in case unscheduled general sedation or anaesthesia was necessary. In severe cases (V4 - severe V5 patients), we used IV light general anaesthesia (100-200 mg intravenous Propofol) to achieve a minimal level of consciousness, allowing for near-live conditions to assess the spastic muscles.

We sterilized the area down to the anal area using povidone iodine. For conscious non-sedated patients, we used frozen water (ice) in a rubber glove finger on the introitus for a few minutes to numb the area before the needle tip pierce. We notify the patient before each step we are about to do and warn her beforehand like when the doctor is going to touch her or introduce his/her finger or dilator.

The patient is warned effectively what to expect as regards pain. Local Anaesthesia was injected using a 25G insulin syringe needle tip (1 ml. Of Xylocaine 2%, Astra USA). A total dose of 100 units of Botulinum toxin type A (BTXA) (- 1 vial- Botox Allergan, USA) or 250 Units (1/2 vial) Dysport; Ipsen Ltd, United Kingdom) is diluted in 2.0 ml. of normal saline solution. The total dose is injected in the bulbospongiosus muscle (bulbocavernosum muscle) in the circumference of the hymenal ring in divided doses on both sides using a 25G insulin syringe needle tip. We made sure to aspirate before injecting the BTXA in every single site to make sure that we are not injecting in a blood vessel. Following the withdrawal of the needle from the muscle, we distributed the bolus of BTX uniformly within the muscle digitally using an arc fashion massage of the introitus. Following the procedure, we instruct the patient to do Kegel exercises as much as possible over 48 hours. We followed up on our patients daily following the procedure for possible adverse effects.

The patients were scheduled for physiotherapy involving gradual muscle dilatation using soft, pliable color-coded silicone dilators of ascending sizes, and covered by lubricated condoms. The process began with size 0 (14 mm in diameter) and progressed to size 4 (35 mm in diameter).

During the initial phase of the dilatation procedure, each session started with an appropriately sized dilator based on the introitus capacity and the degree of vaginismus, gradually increasing the size. The dilator was gently introduced into the introitus while providing verbal reassurance and encouragement to help overcome fear and embarrassment. Subsequently,

patients were encouraged to handle and insert the dilator themselves, with continued psychological support.

Patients were instructed to assess their pain level using a scale from 1 (minimum pain) to 10 (maximum pain) for each dilator. When the pain score reached 3 or less, they progressed to the next larger dilator. Patients were allowed as many sessions as needed to achieve the goal of using dilator number 4.

The last session concluded the program with a sex education class (as most of our couples being from conservative middle eastern culture and upbringing were sexually ignorant, misinformed or misled by husbands watching porn videos, considering it the norm for their wives' response to sex). During this class and building on the trust summed up between the couple and the treating doctor, suggestions for sexual positions in the first few encounters (like in missionary or cowgirl positions) are taught to facilitate the vaginal penetration. We discuss expectations and husband instructions on how to handle his wife during the early encounters as regards calmness and support. Open communication channels between the team for follow up visits, calls, text or voice messages throughout the first year follow up after the last session.

Ethical considerations: All participants provided written informed consents prior to their enrolment. The consent form explicitly outlined their agreement to participate in the study and for the publication of data, ensuring protection of their confidentiality and privacy. This work has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for studies involving humans.

Statistical analysis

Recorded data were analysed using the statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

RESULTS

1204 (86%) of our cases presented with unconsummated marriage, of which 196 cases (14%) presented with dyspareunia. As for the husbands, 168 (12%) of them complained of secondary erectile dysfunction (ED) and 85 (6%) expressed lack of desire in sex after several attempt of approaching their wives.

The average age of our wives was 28 years +/- 5.3 years (17-42 years range), married for 2.6 years +/- 3.3 years (1 month to 16 years). Most of our cases were housewives, 882 (63%) had a career (doctors, bankers, engineers, pharmacists, marketing, lawyers, schoolteachers and university tutors, ... etc.).

Most of our patients were virgins with intact hymen (1,218-87.1%). Some of these had experienced failed trials of sexual relationships in the first night

through trials of partial of the penis. The patient then refrained from intercourse due to the pain experienced in the first encounter; ending into phobia. Others [182-13%) were subject to forcible digital defloration by husband, family member or midwife, doctor using gloved finger, vaginal ultrasound probe or Cusco's speculum. This have left behind painful memories that may end up in having the young wife resist any future encounters.

Of the total cases, 1,302 of our patients (93%) tried gel (or other natural lubricants like baby oil, olive and coconut oil). Many (1,232 - 88%) tried Kegel exercises with partial or no improvement. Almost half of our patients (686-49%) tried local anaesthetic creams and gel. As dilatations trials we encountered several solutions like stuffed glove finger, plastic and glass dilators, candles, cucumbers, sex toys in (882-63%) of our cases. Few (238) tried tranquilizers (17.2%), muscle relaxants tablets (112-8%), sleeping pills (56-4.3%). Some patients, under the notion that they have a psychiatric phobic disease, consulted psychiatrists, behavioural therapy techniques, cognitive behavioural therapy, homeopathy as well as hypnotic therapy (294-21%). Few patients (42-3%) were advised to have physiotherapy sessions to help relax the hip and adductor muscles. In accordance with the cultural beliefs in our societies as many as 462 cases (33%) of our patients attended sessions with a Shiekh or a priest as explained earlier. Some patients asked their husbands to tie them up in bed (21-1.5%), and an astounding 84 (5.4%) shy-fully admitted were beaten by their husbands and/or parents. Two patients (with a doctor and nurse husbands) were given propofol intravenous injection to gain access and overcome his wife's resistance to deflorate her. As regards surgical interventions in the form of hymenotomy and vestibulotomy by general gynaecologists amounted up to 224 cases 15.4%).

Circumcision was evident in 448 (32%) of our cases. Of these cases only 38 [2.7%] recalled the incident as traumatic and related it to their condition.

Most of our patients (910-65%) were categorised as V4, 392(28%) as V5. These patients presented with immense fear from the idea of being approached sexually, or medically examined. These two categories needed general anaesthesia in hospital to be able to inject BTX injection. The less severe cases (98-7%) were done under local anaesthesia in the clinic. All patients were then referred back to the clinic for dilatation physiotherapy.

In our study, the success of the treatment protocol was measures by achieving penetration of the penis into the vagina, with minimum or no pain. This has been achieved by about 1,288 (92%) of our cases. Of the successful cases 308 (22%) needed only 3 sessions, 406 (29%) needed 4, 504 (36%) needed 5 and

182 (13%) needed 6 sessions or more to achieve our goal.

As for side effects of the BTXA injection, only some of our patients (28%) who were injected under local anaesthetic felt pain during the injection process with varying degrees. For the patients who were injected under general anaesthesia, 83% of them felt burning pain at the site of injection which remains for the rest of the day. In the following few days after the injection, few patients reported frequency of micturition (4.3%), and specifically two patients reported orbital muscle pareses.

We followed our patients for nearly one year, 86.6% remained successful. Some patients came back for a second injections one or more years later as their husband were away abroad for several months for work obligations. Patients who, after one month of completing their treatment sessions, did not achieve sustained full penile penetration, due to persistent pain, persistent male erectile inadequacy (erectile dysfunction), disgust or marital problems, were asked to come back to the clinic for further assessment.

Discussion

Vaginismus is the primary reason for unconsummated marriages (UM) in our society, often leading to early divorce or the physical and emotional separation of couples.

Couples who suffer from vaginismus and UM feel ashamed and embarrassed. They think they are the only couples dealing with this issue. Over the course of the last 10 years, we have treated many patients with refractory vaginismus. People who, in essence, did not get better after receiving traditional as well as conventional treatments.

The problem of UM, especially in communities where divorce is refrained from or not permitted, can lead to marital conflict, violence against women, depression, and separation. Infertility is one factor that can contribute to families, on both the wife's and/or the husband's side, becoming involved in cases of UM. Perhaps this could lead to serious problems between these families and even more problems amongst the extended family. This explains why vaginismus in Egypt is not only a medical problem, but also a social one^[17].

The story goes like this: as the man suggests or is inclined to have sex with his wife, on the wedding night. The response would be that her pelvic and perineal muscles (and in some cases her adductors) muscle groups undergo involuntarily tightness. The man usually reports that he feels as if 'like the penis is bumping into a brick wall', or "the penis going astray, slipping forward or backward and hitting a bone", while the wife feels intense pain.

This type of dystonic vaginismus makes penetration impossible. On the long run, vaginismus maybe a common cause of ongoing long lasting sexual pain (dyspareunia) that may extend for years. The woman experiences burning pain (as a result of

muscular hypertonia and spasm), making intercourse more of a suffering than enjoyment.

More common than not, vaginismus may lead to loss of desire; from both sides, paving the ground for avoidance of sex under the umbrella of variable excuses, to avoid pain and/or failure.

However, our study did not find a common link, except in a few cases, between vaginismus and relative history of sexual violence in childhood or adolescence. Moreover, history of an examining gynaecologist who used violence in the management of some of our cases, complicates the condition, rendering it more exaggerated. We also encountered cases where patients underwent surgical procedures, such as hymenotomy (defloration of the hymen) or vestibulotomy (incision of the perineal muscles), based on the advice of doctors. These surgeries were performed under the mistaken belief that the hymen is thick and hard, thus obstructing intercourse. Typically done under general anaesthesia, these surgeries involved inserting a thick gauze pack into the vagina to control bleeding or act as a dilator, and convincing the patient that she could withstand vaginal penetration. Upon returning home, the patient was instructed to remove the gauze pack, an experience many described as the most painful of their lives. Unfortunately, the condition often worsened after these interventions [17].

In our case series, fewer than one-third of the cases had undergone female genital mutilation (FGM), locally known as "female circumcision" (448 cases, 32%). This practice has its roots in Africa and is more prevalent in the southern regions of Egypt, Somalia, and Sudan. Individuals who have undergone FGM may recall experiencing significant pain, humiliation, and psychological trauma during the procedure. In few of our cases, this had reflection of fear on any approach to this area of the body.

In Egypt, virginity symbolises purity and virtue for girls. Before marriage, girls are taught by their mothers not to engage in premarital relationships that could lead to the loss of their virginity. This teaching includes not allowing anyone to approach their genitals or insert any object into their vagina that could disrupt the hymen [17].

In Egyptian weddings, particularly in rural areas, there is a custom where the husband inserts his finger into his wife's vagina to symbolically "break" the hymen. This act is considered important as it should result in blood on a handkerchief, which is then celebrated by the wedding guests and the proud parents of the bride, signifying the daughter's virginity. In some rural areas in Southern Egypt, this task, known as Dokhla Balady, may be performed by an elderly woman or midwife in the family, also known as a Dayah.

It is typical for young women to have intimate conversations with female relatives or friends shortly after getting married. During these discussions, some stories may be shared that reference painful experiences during their early sexual encounters with their husbands.

This could be a significant factor in developing a cause-and-effect relationship between the proximity to the outer genital area and pain. These stories often involve exaggerated descriptions of great pain and bleeding (referred to as "floods of blood"), which may actually have been just a drop or two.

In Egypt, it is common for vaginismus patients to be referred to shiekh or priest [religious guardian] because they believe the girl is possessed by an evil spirit or a jealous female relative who spell a curse on the girl to prevent her to get happily married. We also came across cases where older women in the family performed rituals and sang enthusiastically with the beating of the drums as to expel the evil spirits from the girl's body (called Zar) [17].

As regards our methodology, it is quite different from other methods published in other studies. **Ghazizadeh and Nikzad**, in a study of 24 cases, used higher doses, of 500 U botulinum toxin type A (Dysport; Ipsen Ltd, United Kingdom) diluted with 1.5 mL of normal saline solution injected in a fractionated doses in both the pubococcygeous muscle as well as the puborectalis muscle. We used 250 U of Dysport diluted in 2.0 mL of saline. We did not inject the puborectalis muscles as did the aforementioned authors in which they injected a total dose of 150–400 U in these muscles [8]. **Pacik** included 241 patients in his study. He used a different treatment modality in which he dependent on the patients waking up with the dilator of the thickest diameter already in her vagina. He gradually dilated the vaginal introitus under general anaesthesia after injecting the botulinum toxin in the perineal muscles, in addition to diluted local anesthetic alongside the vaginal canal up to the cervix. This to be followed by home dilation sessions over several weeks [11].

In our study, the success of the treatment protocol was measures by achieving penetration of the penis into the vagina, with minimum or no pain. This has been achieved by about 92.6% of our cases. This is to be compared to 95.8% who had a vaginal examination with no or little resistance, and 75% achieving satisfactory intercourse with some experiencing mild pain in **Ghazizadeh and Nikzad** study in their study over an average of 12.37 months [8]. **Pacik** achieved 71% success rate in the first 5.1 weeks after the treatment session [11].

Following the successful program, we insist on keeping the communication channels open with the treating team via messages or phone calls. If significant problems come up, we ask the patient to visit us in the clinic for face-to-face counselling or treating options. We are rewarded by the gratitude we get after solving the couples' problem. We are rewarded even further when those who seek pregnancy report back pregnant after a few months of solving their problem.

Conclusions

As a conclusion, vaginismus seems to be more common in the Middle East. Couples present to us after months or even years of marriage, after trying several

means, both medical or non-medical, to overcome their condition. An integrated treating programs, including BTXA injection in addition to psychologic support and guided gradual physical dilatation sessions for the perineal muscles do work and are met with high successful rates. In our societies, unconsummated marriage is a problem which has a deep impact both on the couple as well as both families. Some serious social reflections may ensue due to this problem. Raising awareness and obliterating the stigma of vaginismus may help couples to seek treatment for their problem.

Conflict of interest: none.

Funding: none.

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